Summary of Traffic Calming Measures

Traffic Calming Measure	Typical Cost (2017)[1]	Average Daily Traffic	Functional Classification	Average Reduction in Speed	Average Reduction in Volume	Average Reduction in Crashes	Notes
Intersection Applications							
Corner Extension / Bulb-Out	$8,000–$12,000 (four corner extensions); drainage modifications can increase cost to $40,000.	Can be appropriate for all levels of traffic volume.	Intersection of local, collector, and arterial roads.	Likely to decrease slightly; depends on the volume / distribution of traffic. Shorter curb radii can slow turning vehicles.	Minimal	Minimal	Shortens pedestrian crossing distances. Installed only on closed-section roads (i.e. curb and gutter). Major utility relocation may be required (i.e. drainage features). Minimum turning radii = 30 feet inside, 42 feet outside
Mini Roundabout	$15,000–$60,000	One-lane roundabouts: total average daily traffic volumes <25,000 vpd	Intersection of two local roads or of a local and collector road. Approach legs must be one lane in each direction.	40%[3]; varies depending on deflection angles of the approach lanes.	Minimal	One-lane roundabouts: 74%	Center island and splitter islands are fully mountable: maximum height = 4 inches. Minimum inside radius = 30 feet. Minimum outside radius = 42 feet. Not typically used at intersections with high volume of left-turning trucks or buses.
Raised Intersection	$15,000–$60,000; may be higher depending on width of roads and drainage requirements.	Relatively low daily traffic volumes. (<4,000 vpd per intersection leg) [2]	Intersection of local or collector roads with existing or proposed crosswalks.	<10% reduction in mid-block speeds. 85th percentile traversing speeds = 25–35mph.	No data available	No data available	Storm drainage / underground utility modifications are likely necessary. Typically installed at intersections with high pedestrian crossing demand. Maximum speed limit = 35 mph.
Traffic Circle	$10,000–$25,000	One-lane roundabouts: total average daily traffic volumes <25,000 vpd	Intersection of two local roads. Approach legs must be one lane in each direction.	5–13 mph reduction within intersection limits. Less effective than mini roundabouts due to no splitter islands.	Wide range of outcomes; varies depending on available alternative routes.	One-lane roundabouts: 74%	Center island is raised and is **not** fully mountable. Left-turning trucks or buses usually are not able to circulate around center island. Intersection approaches do **not** have splitter islands.
Segment Applications							
Chicane	$8,000–$25,000; varies depending on any necessary modifications to curbing and drainage.	Relatively low daily traffic volumes with an even distribution of traffic. (<3,500 vpd) [2]	Local road or low-volume collector. Maximum two-lane cross-section.	15%–40%; varies depending on the length of the alignment shift, the volume/distribution of traffic, and pre-implementation speed.	Minimal	Minimal	Typical dimensions of a chicane: 6-8 feet in width, at least 20 feet in length. Minimum lane width = 12 feet. Most effective with equivalent traffic volumes on both approaches. Not a preferred location for a crosswalk.
Choker	$10,000–$25,000; varies depending on size of choker and drainage requirements.	Can be appropriate for all levels of traffic volume.	Local, collector, and arterial roads. Maximum two-lane cross-section.	Likely to decrease slightly; depends on the volume/distribution of traffic.	Minimal	Minimal	Typical dimensions of a choker: 6-8 feet in width, at least 20 feet in length. Minimum lane width = 10 feet. Most effective when motorists traveling in opposing directions encounter one-another within the narrowed area.

[1]Source: ITE Traffic Calming Measures and FHWA Traffic Calming ePrimer. Includes costs for design, materials, and construction; does not include right-of-way costs.
[2]Note: Maximum traffic volume thresholds based on ITE and FHWA Traffic Calming resources which references Pennsylvania and South Carolina applications.
[3]Source: FHWA publication – *Roundabouts: An Informational Guide.*

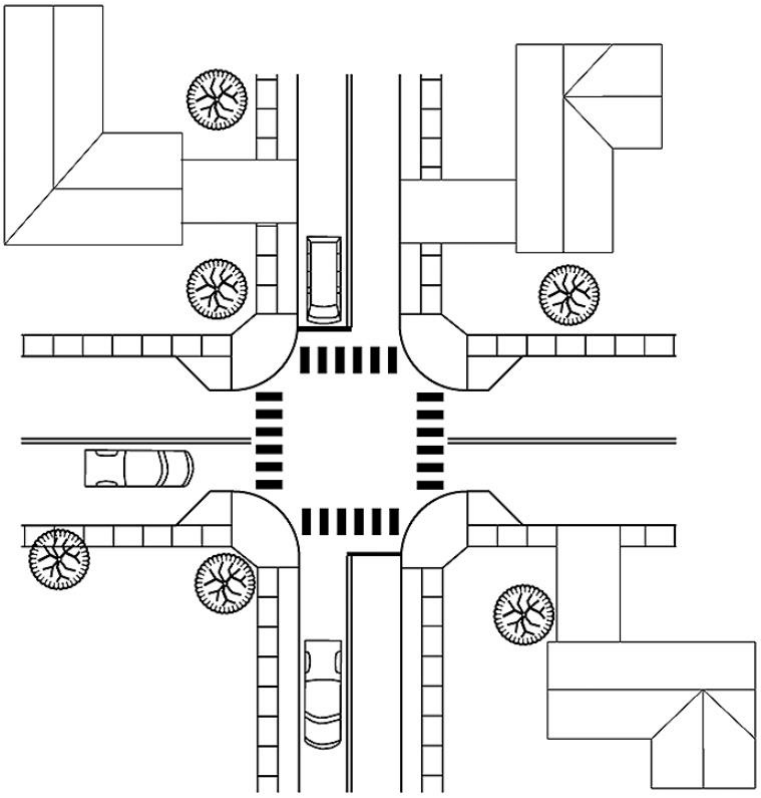
Summary of Traffic Calming Measures *(continued)*

Traffic Calming Measure	Typical Cost (2017)[1]	Average Daily Traffic	Functional Classification	Average Reduction in Speed	Average Reduction in Volume	Average Reduction in Crashes	Notes
Segment Applications							
Median Island	$15,000–$55,000; varies depending on length and width of median.	Can be appropriate for all levels of traffic volume.	Local, collector, and arterial roads. Two-way roads only.	2–3mph reduction at/near the median island.	Minimal	Minimal	Minimum lane width = 12 feet. Can be used as a pedestrian refuge island. May impact access to properties adjacent to median island. May require relocation of drainage features and utilities. May require removal of on-street parking.
On-Street Parking	<$6,000; could be higher depending on design specifications and length of application.	Can be appropriate for all levels of traffic volume.	Local, collector, and arterial roads as a midblock measure or near an intersection.	2–3mph reduction at/near on-street parking areas.	Minimal	Minimal	Minimum roadway width between parked vehicles = 15 feet. Effectiveness is directly affected by parking demand. May limit visibility and sight distance at driveways or intersections.
Speed Cushion	Rubber: $3,000–$4,000 Asphalt: $2,500–$6,000	Relatively low daily traffic volumes (<3,500–4,000 vpd[2])	Local and collector roads.	20%–25%; varies depending on height and spacing of speed cushions.	20%	13%	Speed reduction for emergency vehicles with a wider wheelbase is minimal. Not appropriate on grades greater than 8%.
Speed Hump	$2,000–$4,000		Local road or residential collector.	20%–25%; varies depending on height and spacing of speed humps.	20%	13%	Not appropriate for a primary emergency vehicle route or bus transit route. Not appropriate on grades greater than 8%.
Speed Table	$2,500–$8,000		Local, collector, and arterial roads (in certain circumstances).	Speed reduction typically less when compared to speed humps. Typical traversing speed = 30mph.	20%	45%	

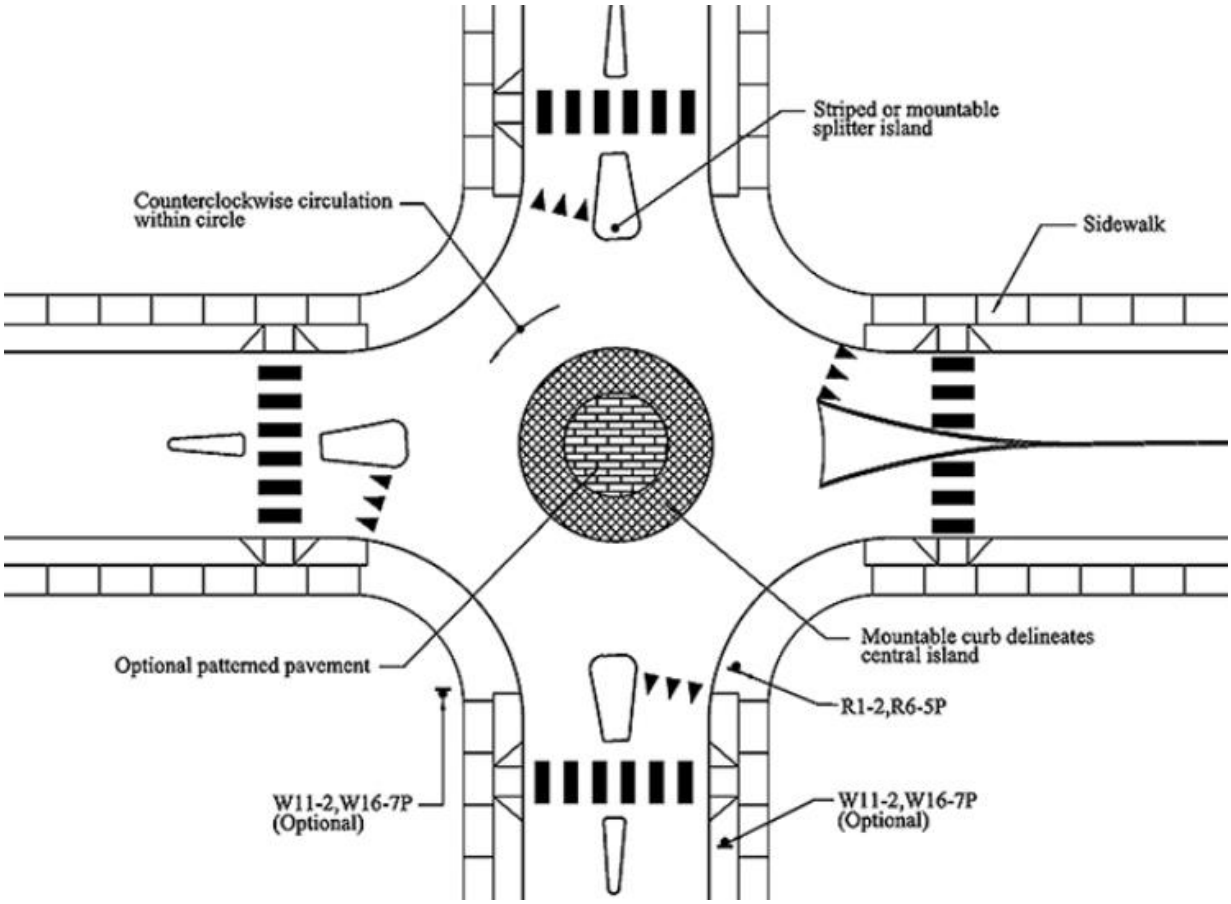
[1]Source: ITE Traffic Calming Measures and FHWA Traffic Calming ePrimer. Includes costs for design, materials, and construction; does not include right-of-way costs.
[2]Note: Maximum traffic volume thresholds based on ITE and FHWA Traffic Calming resources which references Pennsylvania and South Carolina applications.
[3]Source: FHWA publication – *Roundabouts: An Informational Guide.*

Traffic Calming Measure Illustrations

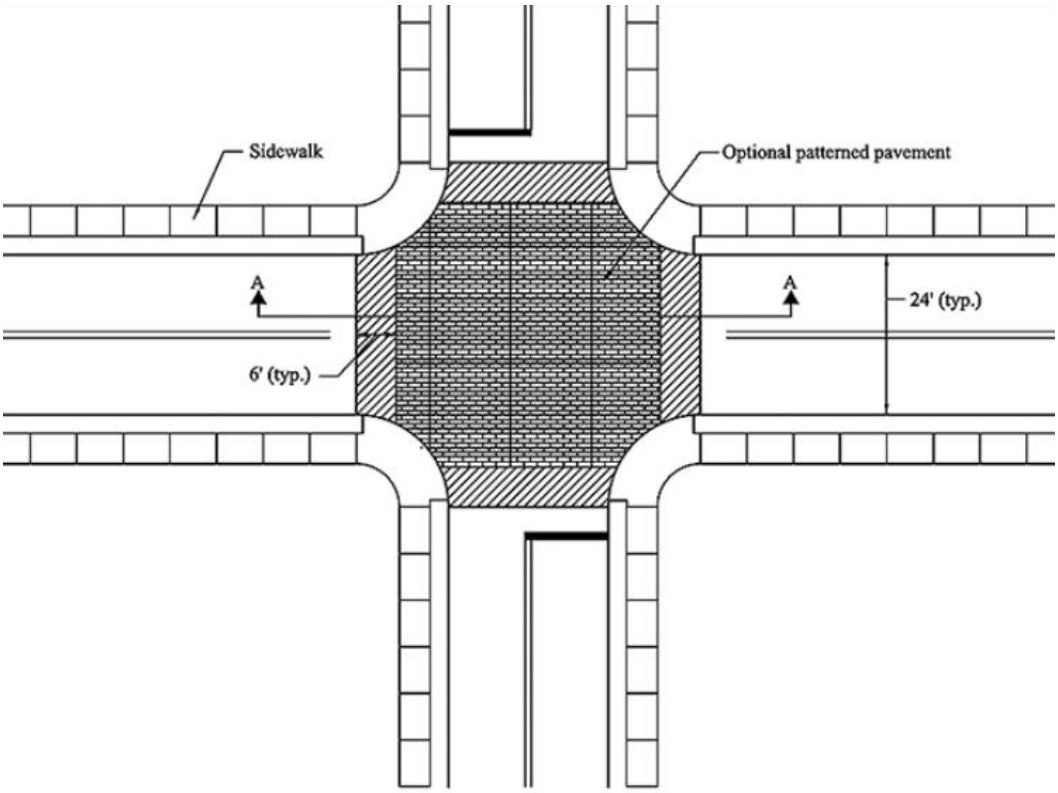
Corner Extension / Bulb-Out



Mini Roundabout



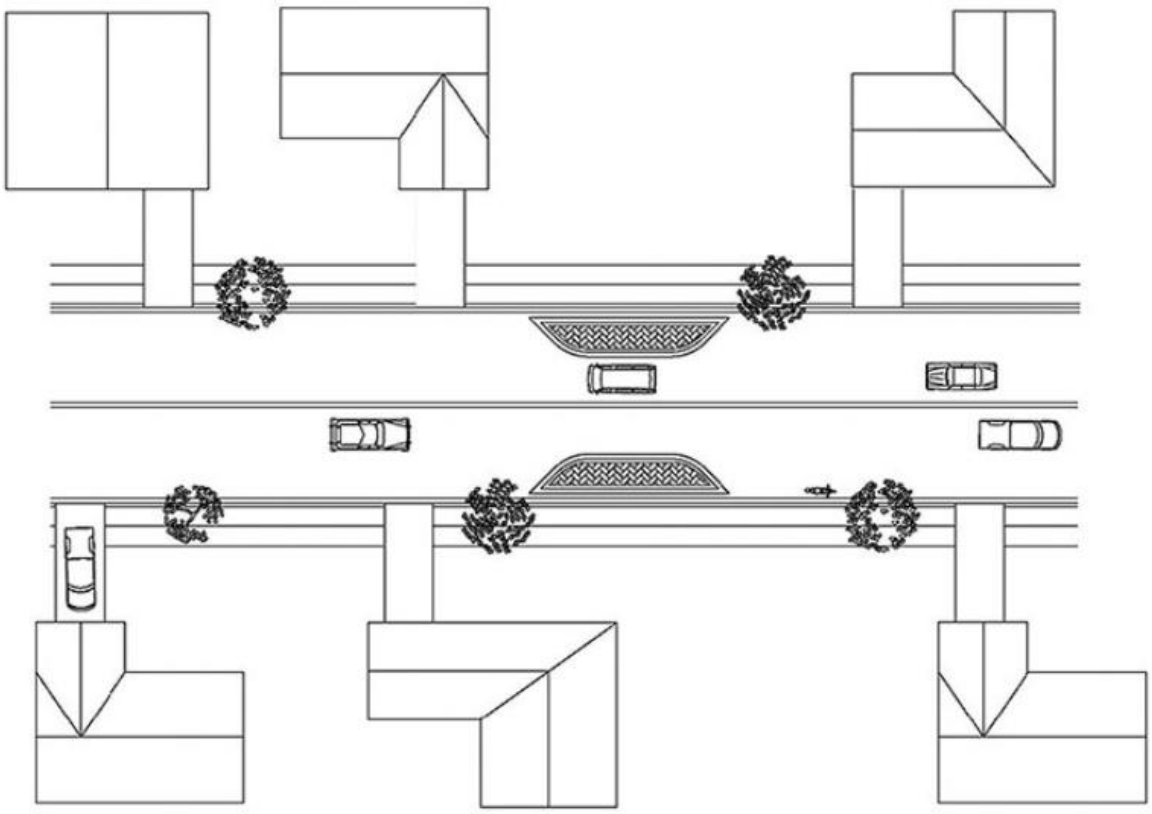
Raised Intersection



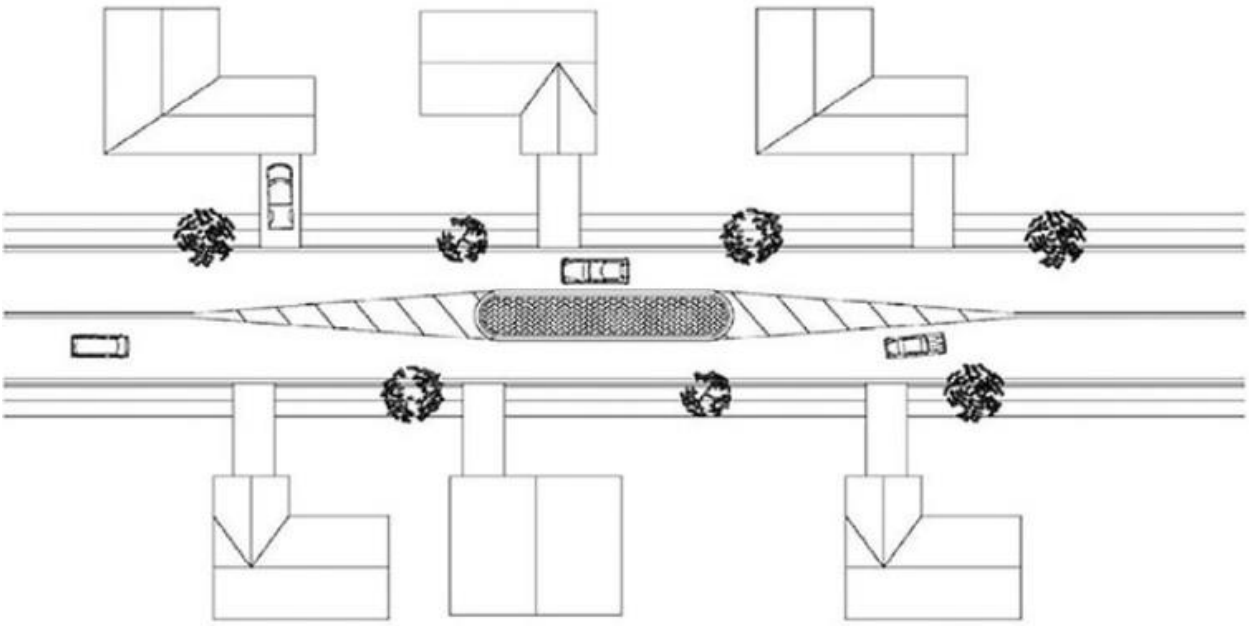
Traffic Circle

Chicane

Choker

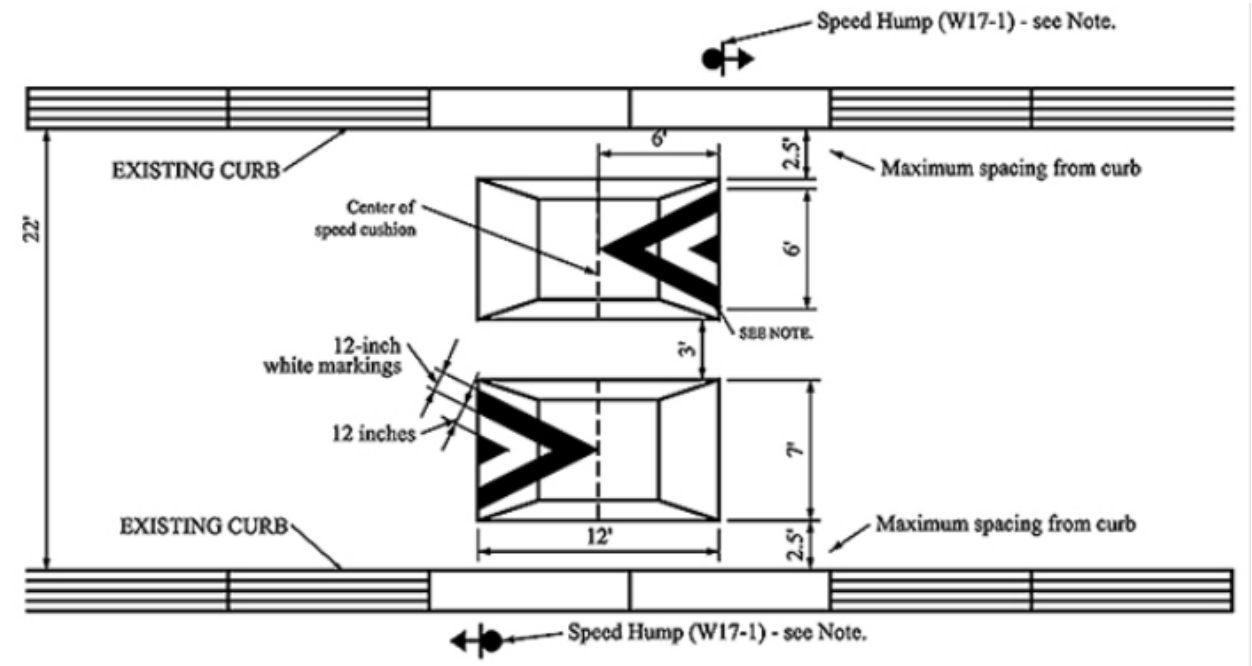


Median Island

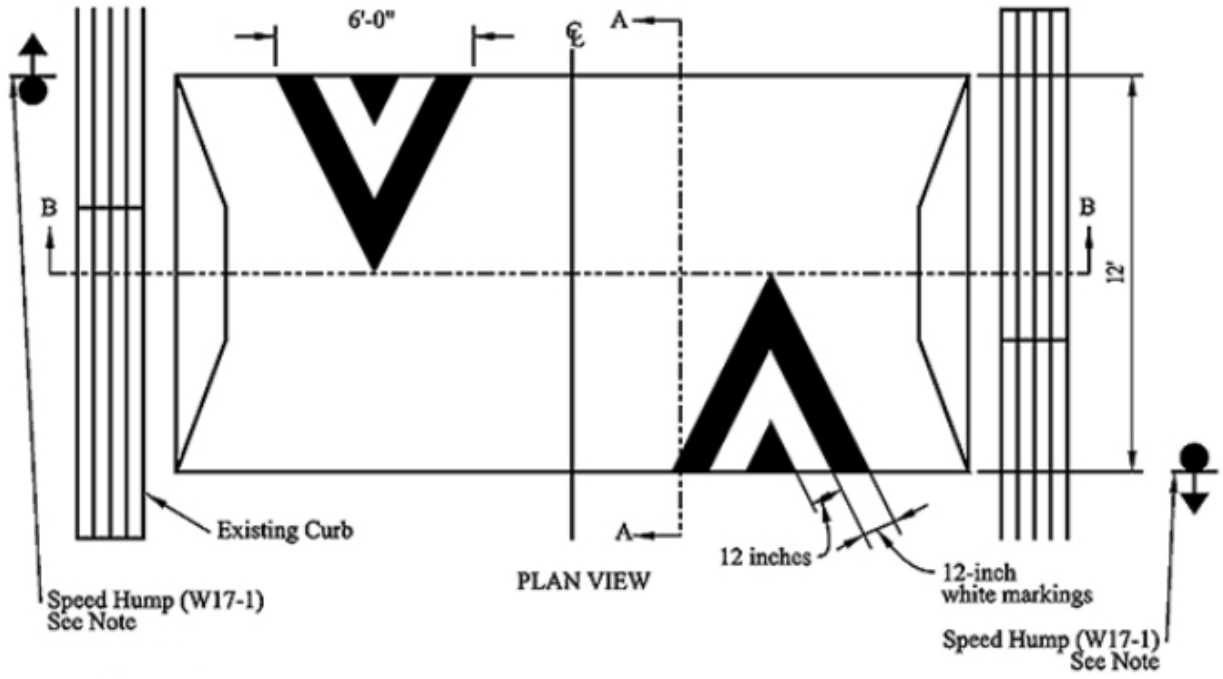


On-Street Parking

Speed Cushion



Speed Hump


6'-0"
℄
A
B
B
12'
Existing Curb
A
PLAN VIEW
12 inches
12-inch
white markings
Speed Hump (W17-1)
See Note
Speed Hump (W17-1)
See Note


SPEED
HUMP

Speed Table